

Claims

1-9 Canceled

10. (New) A circuit arrangement for protecting a switching element (T20, T40, T60) from overload when activated, the switching element being connected between an electrical consumer (10, L1, L2, L3) and a supply voltage (UV), and being controlled by a control signal (ST20, ST20', ST40, ST60), the circuit arrangement comprising:

evaluation elements (60, 61, 62) for determining a malfunction by a switching element voltage (U20, U40, U60) that falls across an activated switching element (T20, T40, T60);

a memory for storing malfunction information (UHU) and for generating a malfunction signal (FS20); and

a feedback element (90) for taking into consideration the malfunction signal (FS20) during control of the switching element (T20) by means of the control signal (ST20'), wherein the evaluation elements (60), the memory and the feedback element (90) are configured with reference to ground.
11. (New) A circuit arrangement according to claim 10, wherein the memory (80) contain a comparator (81), wherein the comparator (81) is connected at a first comparator input to a hysteresis circuit (82), so that an upper and lower hysteresis threshold voltage (UHO and UHU) results which is in each case related to the ground, and the malfunction information is stored in the currently valid hysteresis threshold voltage (UHO, UHU).
12. (New) A circuit arrangement according to claim 10, wherein the feedback element contains a release unit (90) in the form of an AND gate with two ground-related release input signals and a ground-related release output signal.

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13. (New) A circuit arrangement according to claim 10, wherein the switching element voltage (U20) is also present, at least when a malfunction occurs, as a measurement voltage (UM) on a measuring element (R28, D21, D22), which is connected between a main connection of an auxiliary transistor (T21) and the supply voltage (UV).
14. (New) A circuit arrangement according to claim 13, wherein the measuring element has a measuring resistance (R28).
15. (New) A circuit arrangement according to claim 13, wherein which the switching element voltage (U20) present on the measuring resistance (R28) is used in determining a comparative voltage (UC) which is present on a second comparator input and which is related to the ground, so that the memory for storing the malfunction information (UHU) and for generating the malfunction signal (FS20) is triggered if the comparative voltage (UC) is higher than the upper hysteresis threshold voltage (UHO).
16. (New) A circuit arrangement according to claim 13, wherein which the measuring element has at least one measuring diode (D21, D22) and one diode threshold voltage (UD).
17. (New) A circuit arrangement according to claim 16, wherein which the evaluation elements (60) contain a level sub-unit (61) which comprises at least one measuring diode (D21, D22), and the auxiliary transistor (T21) interconnects if the measurement voltage (UM) which is present on the at least one measuring diode (D21, D22) is higher than the diode threshold voltage (UD).
18. (New) A circuit arrangement according to claim 16, wherein which the evaluation

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elements (60) contain a time sub-unit (62) which particularly comprises an RC member, wherein the time sub-unit (62) triggers the memory means (80, 81, 82) to store the malfunction information (UHU) and to generate the malfunction signal (FS20), if the measurement voltage (UM) which is present on the at least one measuring diode (D21, D22) is higher than the diode threshold voltage (UD) for too long a period of time.